

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
11 October 2001 (11.10.2001)

PCT

(10) International Publication Number  
WO 01/76289 A3

(51) International Patent Classification<sup>7</sup>: H04Q 7/30, H04B 7/155

(21) International Application Number: PCT/US01/10300

(22) International Filing Date: 30 March 2001 (30.03.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
09/540,674 31 March 2000 (31.03.2000) US

(71) Applicant (for all designated States except US): APERTO NETWORKS, INC. [US/US]; 1637 South Main Street, Milpitas, CA 95035 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): MAJIDI-AHY, Reza [US/US]; 1225 Eva Avenue, Los Altos, CA 94024 (US).

(74) Agent: SWERNOFSKY, Steven, A.; Swernofsky Law Group, P.O. Box 390013, Mountain View, CA 94039-0013 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

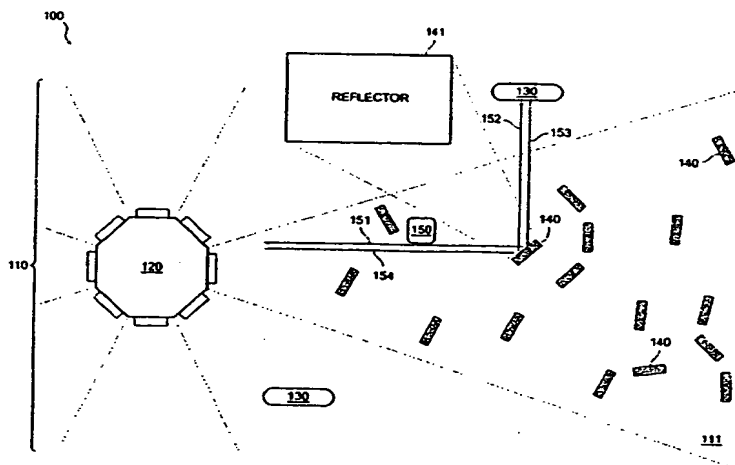
(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ,

[Continued on next page]

(54) Title: ROBUST TOPOLOGY WIRELESS COMMUNICATION USING BROADBAND ACCESS POINTS



(57) Abstract: The invention provides a method and system for robust topology wireless communication using access points. A wireless communication system includes a communication cell having a base station controller and at least one set of customer premises equipment. The customer premises equipment is disposed within a sector of the cell, and communication between the base station controller and the customer premises equipment is controlled by the base station controller so as to prevent interference between multiple sets of customer premises equipment. When customer premises equipment is subject to relatively larger amounts of multipath effect, or interference or noise, one or more access points are disposed within the sector, so as to propagate or route communication between the base station controller and one or more sets of customer premises equipment. The access points may range in complexity from simple reflectors, to repeaters, to routing devices operative within the cell.

Best Available Copy

WO 01/76289 A3



MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

**Published:**

- with international search report

(88) Date of publication of the international search report:  
31 January 2002

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 01/10300

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 H04Q7/30 H04B7/155

According to International Patent Classification (IPC), or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04Q H04L H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 883 884 A (ATKINSON ROGER F) 16 March 1999 (1999-03-16) column 2, line 11 -column 3, line 16 column 3, line 60 -column 5, line 11	1,4-8
X	US 4 284 848 A (FROST EDWARD G) 18 August 1981 (1981-08-18) column 1, line 44 - line 60 column 3, line 45 -column 4, line 62	1,4-9, 12,13
A	US 5 479 400 A (DILWORTH ROBERT P ET AL) 26 December 1995 (1995-12-26) column 1, line 59 -column 2, line 19	1-13
A	US 5 787 111 A (GILMORE WILLIAM E) 28 July 1998 (1998-07-28) claim 1 column 1, line 26 -column 2, line 7	1-13

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

### \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the international search

8 October 2001

Date of mailing of the international search report

12/10/2001

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Dionisi, M

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/10300

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5883884	A	16-03-1999	NONE	
US 4284848	A	18-08-1981	NONE	
US 5479400	A	26-12-1995	AU 685643 B2	22-01-1998
			AU 2700595 A	04-01-1996
			CA 2192201 A1	14-12-1995
			EP 0764372 A1	26-03-1997
			WO 9534143 A1	14-12-1995
US 5787111	A	28-07-1998	AU 3287997 A	05-01-1998
			WO 9745964 A1	04-12-1997